SI 206 Exam One Name:_____

Python Regular Expression Quick Guide

```
^      Matches the beginning of a line
$           Matches the end of the line
.           Matches any character
\s          Matches whitespace
\S          Matches any non-whitespace character
*           Repeats a character zero or more times
*?          Repeats a character zero or more times (non-greedy)
+       Repeats a character one or more times
+?          Repeats a character one or more times(non-greedy)
[aeiou]   Matches a single character in the listed set
[^XYZ]    Matches a single character not in the listed set
[a-z0-9]  The set of characters can include a range
(             Indicates where string extraction is to start
)             Indicates where string extraction is to end
```

String methods:
['capitalize', 'casefold', 'center', 'count', 'encode', 'endswith', 'expandtabs', 'find', 'format', 'format_map', 'index', 'isalnum', 'isalpha', 'isdecimal', 'isdigit', 'isidentifier', 'islower', 'isnumeric', 'isprintable', 'isspace', 'istitle', 'isupper', 'join', 'ljust', 'lower', 'lstrip', 'maketrans', 'partition', 'replace', 'rfind', 'rindex', 'rjust', 'rpartition', 'rsplit', 'rstrip', 'split', 'splitlines', 'startswith', 'strip', 'swapcase', 'title', 'translate', 'upper', 'zfill']

List methods:
[‘append', 'clear', 'copy', 'count', 'extend', 'index', 'insert', 'pop', 'remove', 'reverse', 'sort']

Tuple methods:
['count', 'index']

Dictionary methods:
['clear', 'copy', 'fromkeys', 'get', 'items', 'keys', 'pop', 'popitem', 'setdefault', 'update', 'values']

PART ONE (50pts max out of 53 possible): This section is closed-book, closed note. You may not use any resources that I do not provide. Every question is multiple-choice or short answer. There are no (intentional) syntax errors in any of the questions, so you don't need to worry about tabbing, colons, etc.

Short Answer (2pts each no partial) – if the code wouldn't run, simply write "ERROR"

```
for k in  range (1,15):
        print(k)
        if k == 1:
                break
        elif k == 2:
                continue
        elif k  == 4:
                exit()
print("Bye")
```

1. What is the output of the program to the left?

```
counter = 1
def doLotsOfStuff():
        global counter
        for k in (1, 2, 3):
                counter += 1
doLotsOfStuff()
print(counter)
```

2. What is the output of the program to the left?

```
for k in  range(2):
   print (k)

for k in  range(4,6):
   print (k)
```

3. What is the output of the program?

```
kvps  = {"user":"Chris", "password":"Becca"}
print (kvps['password'])
```

4.What is the output of the program?

```
kvps  = {"user":"Chris", "password":"Becca"}
print (kvps[0])
```

5.What is the output of the program?

```
names1 = ['A', 'B']
names2 = names1[:]
names3 = names2

names2[0] = 'C'
names3[1] = 'E'

print (names1)
print (names2)
print (names3)
```

6.What is the output of the program?

```
foo = {}
print (type(foo))
```

7.What is the output of the program?

```
foo = (3, 4, 5)
print (type(foo))
```

8.What is the output of the program?

```
foo = {1:'1', 2:'2', 3:'3'}
print (len(foo))
```

9.What is the output of the program?

```
foo = {1:'1', 2:'2', 3:'3'}
del foo[1]
foo[1] = '10'
del foo[2]
print (len(foo))
```

10.What is the output of the program?

```
names = ["A", "B", "C", "D"]
print (names[-1][-1])
```

11.What is the output of the program?

```
numbers = [1, 2, 3, 4]
numbers.append([5,6,7,8])
print (len(numbers))
```

12.What is the output of the program?

```
d = lambda p: p * 2
t = lambda p: p * 3
x = 2
x = d(x)
x = t(x)
print (x)
```

13.What is the output of the program?

```
x = 4.5
y = 2
print (x//y)
```

14.What is the output of the program?

```
for k in  range (1,15):
        print(k)
        if k== 1:
                continue
        elif k == 2:
                break
        elif k == 4:
                exit()
print("Bye")
```

15.What is the output of the program?

16. Name/show two shortcuts that you use with your software editor on a regular basis. Put things that save you time!!

17. Name/show two shortcuts (not commands!) that you use with your terminal/console on a regular basis. (A command would be typing **ls** or **cd hw1**.) I will except command with special extensions. Put things that save you time!!

Matching: (1pt each)

18. _____ To join two operands end to end.

19. _____ A list of the functions that are executing, printed when an exception occurs.

20. _____ A function that does not return a value.

21. _____ Repeated execution of a set of statements using either a function that calls itself or a loop.

22. _____ An ordered set; that is, a set of values where each value is identified by an integer index.

23. _____ A part of a string specified by a range of indices.

24. _____ A circumstance where two or more variables refer to the same object.

25. _____ A sequence of values.

26. _____ A set of counters.

27. _____ An immutable sequence of elements.

28. _____ The notion that the "+" and "*" characters in a regular expression expand outward to match the largest possible string.

29. _____ A special character that matches any character. In regular expressions this character is the period.

30. _____ A network connection between two applications where the applications can send and receive data in either direction.

31. _____ A number that generally indicates which application you are contacting when you make a socket connection to a server.

A. socket

B. traceback

C. histogram

D. iteration

E. greedy matching

F. slice

G. aliasing

H. dictionary

I. void function

J. tuple

K. sequence

L. wild card

M. concatenate

N. port

O. list

Multiple Choice (1 pt each)

32. Which of the following data structures can be used with the "***in***" operator to check if an item is in the data structure?
    A. list
    B. set
    C. dictionary
    D. None of the above
    E. All of the above

33. What is the function of the secondary memory in a computer?
    A. Execute all of the computation and logic of the program
    B. Retrieve web pages over the Internet
    C. Store information for the long term – even beyond a power cycle
    D. Take input from the user

34. What is the purpose of the "def" keyword in Python?

    A. It is slang that means "the following code is really cool"
    B. It indicates the start of a function
    C. It indicates that the following indented section of code is to be stored for later
    D. B and C are both true
    E. None of the above

35. Assume ***pattern = 'back'*** What is the value of re.match(pattern, 'text.back')
    A. true
    B. false

36. Assume ***pattern = 'back'*** What is the value of re.search(pattern, 'text.back')
    A. true
    B. false

<u>DONE -- Hand in Part One before you begin Part Two</u>

Short description of Part Two (50pts):
This next section is open-note, open resource and must be submitted to Canvas before the end of class. If you submit after the deadline your code will not be accepted. More details will be provided in **Canvas –> Assignments -> Exams -> Exam 1: Part Two**

1. Download a file and extract all of the email addresses and write them to a file.

2. Connect to a webpage and find all occurrences of a certain HTML element. Then return a sorted list of those elements based on the value of certain attributes.